

LATCHING HINGE MASKING DEVICE

This application claims priority of U. S. Provisional Patent Application #60/402,500, filed 8/09/2002.

BACKGROUND OF THE INVENTION

The art of the present invention relates to paint masking devices in general and more particularly to an improved and modified hinge masking device which is utilized to cover hinges on doors and doorways during painting, coating, or finishing of the aforesaid. The device and method of use represents an improvement over the prior art by providing a unique latching mechanism and one or more relief portions for screw heads which are extended from the covered hinge.

During the process of painting a door with attached hinges, it is necessary to mask or cover the hinges to prevent paint from attaching to the hinges. When the hinge pin is removed from the hinge and the door removed from the jamb or mounting, there are two hinge plates or hinge halves present which must be covered prior to painting. The present invention represents a masking device and the method for use to cover a hinge half attached to a door or door frame while the surrounding areas are being coated with paint or other surface preparations. The device and its method of use is not affected by extended hinge screw heads.

During painting, staining, waxing and similar finishing operations to doors and door frames, it is commonly desired to prevent these coatings from coming in contact with the exposed areas of the hinge halves. It is often required to either shield the hinge halves or remove them entirely until the finishing operations are complete. One method practiced is to remove the door from its frame and to use masking tape and a sharp knife to trim the tape close to the exposed area of each hinge half. This basic technique with variations is shown and described in U.S. Patents, #5,722,120 issued 03/03/1998 to Bindschatel, et al., titled: *Pre-Stamped Half-Hinge Adherent Cover*, #4,921,028 issued 03/01/1990 to Schwartz, titled: *Door Hardware Cover*, #3,961,602 issued 06/08/1976 to Dresser, titled: *Butt Covers*, #4,796,330 issued 01/10/1989 to Ziegler, titled *Hinge Mask*, and #5,056,191 issued 10/15/1991 to Love, titled: *Butt Hinge Paint Mask and Masking Method*.

Another prior art method is to remove the door from its frame and then remove the hinge fasteners and the hinge halves completely from the door and door frame area. This old method then requires reinstalling the hinge halves after the finishing operations are completed. Both of the

1 aforesaid methods are objectionable because of the resultant low productivity. Often residual glue
2 or adhesive left over from the taping operation requires a solvent wiping step to completely remove
3 this residue from the exposed areas of the hinge halves. Removing and reinstalling hinge halves adds
4 to the risk of damaging the newly finished door and door frames due to the amount of additional
5 handling and tool usage required to perform the task. Further, hinges that are completely removed
6 and reinstalled later run the risk of mix ups in hinge placement which could prevent proper operation
7 when articulating the door.

8 The present art hinge masking device is a one piece molded device which is self adhering to
9 a hinge half without the use of adhesives, adhesive tapes, fasteners or external clamping devices. It
10 serves as a protective mask which shields the normally exposed area of the hinge half during door and
11 door frame finishing operations. The device has a unique latching mechanism and one or more relief
12 portions for screw heads which are extended from the covered hinge.

13 The present art invention is preferably of a one piece construction. The pre-molded shape of
14 the protector allows for an easy snap in place application or removal of the device with its unique
15 latching mechanism. It covers or encases the normally exposed hinge areas and shields them against
16 coatings which are applied to the door and door frame areas as part of its finishing. In its preferred
17 form, the device is molded from a synthetic plastic resin which can be either of the rigid or semi-rigid
18 type and reused.

19 Prior art pre-molded devices such as disclosed in U.S. Patents, #5,224,240 issued 07/06/1993
20 to Smith et al. titled: Hinge Masking Device and Method, #5,432,979 issued 07/18/1995 to Harper,
21 titled: Door Hardware Paint Shield, and #4,195,590 issued 04/01/1980 to Herrington, titled Door
22 Casing Hardware Paint Shield fail to offer the combination of the unique positive latching mechanism
23 and convenience of use which the present art offers. For example, *Smith et al.* provides a one piece
24 pre-molded device but does not provide the positive latching or screw head relief which the present
25 art provides. *Harper* describes a one piece pre-molded mask which slides over the hinge but must
26 be broken for removal. *Herrington* describes a one piece pre-molded shield which slides over the
27 hinge but does not fully cover the hinge or allow for easy removal. None of the aforesaid prior art
28 devices allow for positive placement and reliable and convenient re-use of the device.

29 Accordingly, an object of the present invention is to provide a device and method for mask

1 protecting a door or door frame hinge half even if the hinge half has screw heads which are extended
2 above the level of the hinge.

3 Another object of the invention is to provide a device which can be quickly installed without
4 the use of adhesives, fasteners, tape or clamps and which has a quick and secure locking mechanism.

5 Another object of the invention is to provide a device that can be quickly removed from the
6 hinge half without the use of tools, and is easily and reliably reusable many times over.

7 A further object of the present invention is to provide a masking device of one piece
8 construction.

9 A still further object of the invention is to provide an inexpensive covering device for
10 premounted door and door frame half hinges during painting, staining, and similar operations.

11 Another further object of the invention is to provide a one piece part which is capable of being
12 used on either the door half hinge, or the door frame half hinge to shield the exposed areas of the
13 mounted half hinge.

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15 SUMMARY OF THE INVENTION

16 To accomplish the foregoing and other objects of this invention there is provided a device and
17 method for mask protecting a door or door frame hinge half. The apparatus and method is especially
18 suited for repeated and secure covering of exposed hinge halves during painting, staining, and
19 finishing operations.

20 The device is provided with two rigid half cylindrical cavities, a first cavity and a second
21 cavity together forming a complete cavity, connected via a thin membrane area or what is commonly
22 accepted as a living hinge. At the ends of the first cavity are end closure walls having one or more
23 extending lips which latch over and with a large panel or long flat area attached to the second cavity.
24 The first cavity also has a somewhat smaller or short flat area, between and connecting the end
25 closure walls.

26 When the device is folded along the membrane or living hinge area the two cavity areas form
27 a shield or cylinder around the hinge barrel. As the two cavities come together, the extending lips
28 on the end closure walls slide over the large panel via the elastic bending of said end closure walls.
29 The elastic return to position of said extending lips holds the first cavity to the second cavity and

1 keeps the device in place. Once the extending lips are positioned over said large panel the entire
2 exposed hinge half is covered. This includes both sides of the hinge plate, its edges, the hinge barrel,
3 and its edges. By grasping the long flat area and pulling away from the short flat area the device can
4 be easily removed. Preferably the end closure walls are flexed away from said cavities to make
5 removal easier.

6 The large panel or long flat area attached to the second cavity contains one or more relief
7 portions for screw heads which are not flush with the hinge. That is, often the screws which hold a
8 hinge do not have heads which are flush with the hinge plate itself. This phenomena is often caused
9 by sloppy workmanship or misaligned screw holes. Prior art hinge covering devices have not
10 addressed this problem. If the screw heads cause the large panel or long flat area to not sit flush with
11 the hinge plate, when painted the hinge plate will have paint leak onto it. In its preferred form, the
12 present art utilizes three relief portions of circular cross section and approximately 1/16 inch deep,
13 one for each screw head of a conventional hinge. The relief portions are aligned in a pattern which
14 covers the hinge screw heads. Alternative embodiments may utilize one relief portion or a plurality
15 of relief portions of any shape or depth on said large panel which correspond to the placement of
16 screw heads in the hinge plate.

17 Although preferably molded from a one piece polymer material such as a high density
18 polyester, the device may be manufactured from a variety of materials, including but not limited to
19 wood, metals, composites, papers, and cloths.

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21 BRIEF DESCRIPTION OF THE DRAWINGS

22 Numerous other objects, features and advantages of the invention should now become
23 apparent upon a reading of the following detailed description taken in conjunction with the
24 accompanying drawings, in which:

25 FIG. 1 is a top plan view of a latching hinge masking device of the present invention in an
26 open position.

27 FIG. 2 is bottom plan view of a latching hinge masking device of the present invention in an
28 open position.

29 FIG. 3 is a left side plan view of a latching hinge masking device of the present invention in

1 an open position which is symmetrical with a right side plan view.

2 FIG. 4 is a back side plan view of a latching hinge masking device of the present invention in
3 an open position.

4 FIG. 5 is a front side plan view of a latching hinge masking device of the present invention
5 in an open position.

6 FIG. 6 is a perspective view of a latching hinge masking device of the present invention placed
7 upon a door half hinge in a closed position.

8 FIG. 7 is a front side plan view of a latching hinge masking device of the present invention
9 in a closed position.

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DETAILED DESCRIPTION

12 Referring now to the drawings, there is shown in FIGS. 1 - 6 a preferred embodiment of a
13 latching hinge masking device **10** having a first cavity **14**, a second cavity **22** having an attached panel
14 **24** with one or more relief portions **26**, a living hinge **30**, and a latching mechanism **12**. The device
15 **10** is particularly adapted for repeated covering of door hinges during painting, staining, or refinishing
16 procedures.

17 The present invention represents a door hinge masking device **10** utilized for masking a
18 half-hinge that is attached onto a surface of either a door or a door frame. The half-hinge has a
19 portion of the barrel that projects outwardly from the surface and an integral hinge plate with a
20 thickness embedded in the surface leaving exposed a first face or outboard surface of the hinge plate
21 and a portion of a second opposite face or inboard surface of the hinge plate. The present art device
22 is an integral unit that includes an elongate cylindrical body **28**, comprised of the first **14** and second
23 **22** cavities, of a size and shape sufficient to enclose the barrel portion of the half-hinge.

24 The cylindrical body **28** of the present invention has a cylindrical wall **32** of an elongate length
25 and two end closure walls **16**. When closed, the device has a lengthwise opening **34** through a side
26 of and substantially parallel with the cylindrical body **28**. This opening **34** forms an upper lengthwise
27 edge **19** on the first cavity **14** and a lower lengthwise edge **27** along the second cavity **22**. The device
28 further includes a first cover panel **20**, i.e. smaller or short flat area, attached along the upper
29 lengthwise edge **19**, or first lengthwise edge of said first cavity **14**, extending radially outwardly from

1 the cylindrical body **28**, the first cover panel **20** of a size and shape to cover the exposed portion of
2 the second face surface of the hinge plate. The device also includes a second cover panel **24**, i.e.
3 large panel or long flat area, attached along the lower lengthwise edge **27**, or first lengthwise edge
4 of said second cavity **22**, extending radially outwardly from the cylindrical body **28**, the second cover
5 panel **24** of a size and shape to cover the exposed first face surface of the hinge plate. In the
6 preferred embodiment, there exists a space **36** or lengthwise opening **34** between the first **20** and
7 second **24** cover panels approximately the thickness of the hinge plate when the device is latched and
8 closed.

9 In the preferred embodiment, the first cavity **14** or first lengthwise half cylindrical housing is
10 shaped to cover half of the hinge barrel, and the second cavity **22** or second lengthwise half cylindrical
11 housing is shaped to cover a remaining half of the hinge barrel. The device further includes a
12 hingeable membrane or living hinge **30** attached between the half cylindrical housings **14**, **22** along
13 adjacent second lengthwise edges of said first **14** and second **22** cavities opposite said panels **20**, **24**.

14 Yet another aspect of the invention is a method to mask a half-hinge attached onto or into a
15 surface of either a door or a door frame, the half-hinge having a portion of the barrel that projects
16 outwardly from the surface and an integral hinge plate with a thickness inlaid in the surface leaving
17 exposed a first face surface of the hinge plate with extending screw heads and a portion of a second
18 opposite face surface of the hinge plate. The method includes providing one of the devices **10**
19 described herein and utilizing the same when extending screw heads are present. The method further
20 includes opening the device to widen the lengthwise opening **34** and engaging the elongate cylindrical
21 body **28**, i.e. first cavity **14** and second cavity **22**, over the barrel portion with the cover panels **20**,
22 **24** facing their respective face surfaces of the hinge plate. The method then includes operating the
23 closure means or latching mechanism **12** to hold the cylindrical body **28** around the barrel portion and
24 the cover panels **20**, **24** against the exposed face surfaces of the hinge plate, and then coating the
25 surface of either the door or the door frame with a chosen surface preparation. The method then
26 includes releasing the latching mechanism **12**, and removing the device **10** from the half-hinge.

27 As aforesaid, in its preferred form, the device includes two cavities **14**, **22**, two flat areas **20**,
28 **24**, two end closure walls **16**, and one or more extending lips **18** which latch over and with the large
29 panel **24** or long flat area attached to the second cavity **22**. In its preferred form, the large panel **24**

1 has notches **25** in the edges where the extending lips **18** mate. Preferably these notches **25** are
2 tapered from the large panel **24** surface opposite that portion which mates with the hinge plate to
3 approximately $\frac{1}{2}$ of the thickness of said large panel **24**. This taper allows said extending lips **18** to
4 easily disengage from said large panel **24** when force is applied to said panel **24**. This allows for easy
5 opening of the device **10**.

6 In its preferred form, the latching hinge masking device **10** is a one piece molded rigid
7 thermoplastic material which has integral portions arranged so that the shapes of said portions
8 conform to that of a standard interior half door hinge. By placing the first cavity **14** with the short flat
9 area **20** against the inboard side of a mounted half hinge and bending it along the membrane or living
10 hinge area **30**, the first cavity portion **14** will then cover a portion of the hinge barrel area and the
11 exposed back portion of the hinge plate. The second cavity **22** will cover the remaining portion of
12 the hinge barrel and the second panel **24** will cover the exposed or outboard side hinge plate area,
13 including extending screwheads. The normally exposed edges or ends of the half hinge are covered
14 by the end walls **16** attached to the first cavity **14**.

15 The device **10** as shown and described is used on either the premounted half hinge of a door
16 or a door frame. The intended use is for standard prehung unfinished doors and frames used in new
17 home construction or when refinishing doors and/or the frame moldings. The device **10** snaps in
18 place with the extending lips **18** mounted on the end closure walls **16** latching over and with the large
19 panel **24** or long flat area attached to the second cavity **22**. Preferably an extending lip **18** is placed
20 onto each end closure wall **16** on the cavity side of said wall **16**. Alternative embodiments may utilize
21 only one extending lip **18** on only one end closure wall **16** or use multiple extending lips **18**. The
22 ductile material, preferably thermoplastic resin, allows each end closure wall **16** to flex as the
23 extending lip **18** slides over the large panel **24** or flat area. The natural memory of the material allows
24 the end closure wall **16** to return to the molded or original position after sliding over the large panel
25 **24**, thereby securing the device **10** around the half hinge. The large panel area **24** is designed to cover
26 the plate area or outboard side and shape of a standard hinge. The short flat area **20** covers the short
27 exposed area or inboard side of a premounted hinge half. The cylindrically shaped cavities **14**,
28 **22** cover the round barrel pivot area of a hinge half and the end closure walls **16** cover the edges or
29 ends of a hinge half which are not inlaid into a door or door frame.

1 Those skilled in the art will appreciate that a door hinge masking device has been shown and
2 described. That said present art is capable of repeatedly masking half hinges while attached to a door
3 or door frame during the painting or finishing process. The device further provides a unique latching
4 mechanism which assures secure latching when attached and provides for easy removal and reuse
5 when the finishing process is complete.

6 Having described the invention in detail, those skilled in the art will appreciate that
7 modifications may be made of the invention without departing from its spirit. Therefore, it is not
8 intended that the scope of the invention be limited to the specific embodiments illustrated and
9 described. Rather it is intended that the scope of this invention be determined by the appended claims
10 and their equivalents.